BUILDING REGIONAL INNOVATION CAPABILITY:
THE IMPACT OF IRRIGATION IN THE COAL RIVER VALLEY

Alexandra Lejda,

Professor Jonathan West and Dr Susan Nelle

Prepared for the

Department of Economic Development and Tourism,

Government of Tasmania

Australian Innovation Research Centre

University of Tasmania

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1 BACKGROUND

The Tasmanian Department of Economic Development and Tourism commissioned the Australian Innovation Research Centre (AIRC) to conduct a study of innovation capability within the Coal River Valley.

The Coal River Valley was selected for several reasons:

- Innovators within the region had experimented with diversifying the agricultural base, and had led the drive to introduce irrigated crops in the region;
- An industry group, the Coal River Products Association, played a significant role in encouraging farmers to try new crops, and in building public and political support for an irrigation scheme;
- The Government invested in a major irrigation scheme to provide a reliable source of water to support irrigated agriculture; and
- The combination of climate, soils and an assured water supply attracted entrepreneurs to the region with new investment and expertise in intensive horticulture.

The Coal River Valley case study demonstrates the critical need to better understand agricultural *potential*.

Condemned as “hopelessly uneconomic” prior to its construction by the then Federal Minister for Resources and Energy, the Coal River Valley irrigation project has since its construction in 1986 proven a highly successful source of wealth for Tasmania’s economy.

Today, as the State considers a new wave of commitment to the agri-food sector with the aim of expanding its position as a high-end food producer, the Coal River experience stands as a model of what might be achieved elsewhere in the State.

This study investigates how, why, and where the Coal River irrigation project achieved its success to lay the basis for learning how to repeat and build on this performance.

1.1 Study Objectives

The purpose of the Innovation Study was to identify and assess the factors that contributed to building innovation capability in the Coal River Valley.

The specific objectives of the Study were to:

- Assess the role and impact of the following factors in building innovation capability in the Coal River Valley including: public policies and regulatory framework, public and private investment, sector innovators, community leadership and culture, collaborative industry groups and R&D providers.
- Apply the findings and conclusions to develop a model for regional innovation in Tasmania.

1.2 Study Methodology

The AIRC used three methods to collect data, analyse the findings and draw conclusions about innovation capability in the Coal River Valley:

- A historical profile of the Coal River Valley was developed based on archival records, media reports and the correspondence of the Coal River Products Association from the 1970's to 2000;
- Regional innovators were interviewed using a structured, but open-ended questionnaire; and
- A system of innovation framework was adapted from a study of innovation in the Australian dairy industry[1] and used to analyse the data and interview results to identify the key factors contributing to innovation in the region.

Sections 2, 3 of this study summarise the analysis, key findings and conclusions relating to innovation in the Coal River Valley. Section 4 outlines the policy implications for developing regional innovation capability. The detailed data and innovator case studies are included in Appendix 1.

1.3 The 'Innovation System'

An innovation system framework has been used to analyse the dynamics and contribution of the structural elements within the system to its effective functioning. The structural elements of an innovation system include:

- Actors – key players: the innovators, investors, public policy makers and RD&E providers;
- Knowledge – knowledge base of accumulated capabilities (skills and expertise) to develop innovative solutions; and
- Rules – the institutions that shape behaviour: legal and regulatory frameworks and social and cultural norms.

A functional analysis of the 'innovation system' in the Coal River Valley was used to identify the key factors that contributed to building innovation capability in the region:

- Drivers – how innovation opportunities were identified and defined: eg through market signals and customer requirements or through new technological platforms;
- Strategy and investment – how innovation opportunities were shaped and financed and risks were managed (looking at both public and private investment and risk-management strategies);
- Knowledge and capabilities – how new knowledge, skills and technology were accessed and developed to enable innovation;
- Infrastructure impact – how infrastructure requirements (both 'hard' and 'soft') supported or inhibited innovation; and
- Institutional impact – how regulations and/or social norms supported or inhibited innovation.

[1] 'Future Capability Requirements for Pre-Farm Gate Research, Development and Extension in the Australian Dairy Industry, GHD Hassall in association with the Australian Innovation Research Centre, October, 2008.

2 ANALYSIS AND KEY FINDINGS

The key findings from an analysis of the innovation system and factors contributing to the development of innovation capability in the Coal River Valley are presented below. A detailed historical profile, data and interviews with regional innovators in the Coal River Valley are contained in Appendix 1.

2.1 Innovation Drivers

How innovation opportunities were identified and defined

The presence of a reliable source of water made possible by the SEIS, combined with appropriate soil and climate characteristics, created the conditions for the development of higher value agriculture and intensive horticulture in the Coal River Valley from the late 1980s.

The stimulus for change came from innovators in the Coal River Valley led by Bill Casimaty who saw a need to diversify from traditional dry land farming and grazing operations. They identified and experimented with a variety of new crops for which they believed there was a demand (or a demand could be created as in the case of turf).

The Coal River Products Association (CRPA) played a significant role in rallying support from the existing farming community, the public and the several governments of the day to drive the campaign for a comprehensive irrigation scheme in the region. The CRPA also championed diversification into a new range of irrigated crops for existing farmers.

When a reliable source of water was secured, the transformation of the Coal River Valley was driven by market opportunities identified by some existing farmers (Casimaty and Houston), by the seed companies (South Pacific Seeds), and by new entrepreneurs attracted to the region (Qew Orchards, Frogmore Creek and Domaine A/Stoney Vineyard).

The region now has some very sophisticated and capable businesses with a global customer base. The profiles of these innovators demonstrate that long-term relationships with customers based on mutual trust and commitment to delivering results stimulate innovation opportunities.

2.2 Strategy and investment

How innovation opportunities were shaped and financed, and risks managed

Innovation is a solution-seeking process encompassing a range of risks: eg market, production and financial risks.

The history of the transition to higher value agricultural and intensive horticulture in the Coal River Valley illustrates the value of reliable and accessible information about potential markets and production requirements of specific crops.

The Blundstone report, commissioned by the CRPA provided a comprehensive assessment of the potential for intensive horticultural ventures. No individual farmer would have been able to develop this information base on his own.

Access to capital is a major requirement for developing an intensive horticultural enterprise. The costs of initial capital investment are particularly high as it takes several years for most crops to reach maturity.

All of the innovators profiled in the Study have relied on their own private capital with the exception of Qew Orchards that also manages an orchard of 100,000 trees as part of a Managed Investment Scheme (MIS).

Two of the case profiles (StrathAyr and Houston's Farm) are examples of existing farmers who made the commitment to develop an intensive agricultural operation on an existing property, and who have prospered after weathering early set-backs.

The remaining professional farmers in the Valley have been more reluctant to invest in the required irrigation infrastructure as some of them are also farming on leased land to reach the commercial scale needed to be competitive in current market conditions. They generally have a mixed farming enterprise in which they include some irrigated crops (eg peas, vegetables for seeds).

The innovators' profiles illustrate that much of the expansion into intensive horticulture has been done by new entrepreneurs attracted to the Valley because of the combination of water, soil and climate characteristics. They brought new expertise and investment to the region.

There is always the ongoing risk of managing fluctuating market prices. Some of the innovators are committed to developing niche or superior products and services.

Some, such as South Pacific Seeds, act as a 'chain captain' effectively linking Coal River Valley growers with global customers. SPS's managers regularly visit their customers and contract with them for seed production at agreed price. The company in turn offers guaranteed price contracts along with assistance and advice to its growers.

2.3 Knowledge and Capabilities

How new knowledge, skills and technology were accessed and developed

The ability to access new knowledge, technology and skills is essential to building innovation capability.

The history of innovation in the Coal River Valley demonstrates the importance of accessible sources of science and technology services and the role of effective 'knowledge brokers'.

During the early transition to more intensive agriculture, the State Government, Department of Primary Industries (DPI) and the University of Tasmania played significant roles in identifying and conducting trials of new crops.

The Tasmanian manager of South Pacific Seeds continued to source expertise from the DPI through his personal contacts. The Department has also been instrumental in helping Qew Orchards identify horticultural crops suitable for the area.

Neville Mendham, a lecturer at the School of Agricultural Science at UTAS, provided a direct link between the University and the seed industry in the district through his involvement with the University Farm and by becoming a vegetable seed grower himself. It was through Dr Mendham that a doctoral student from the University, Cameron Spurr, was contracted by South Pacific Seeds to conduct research on a variety of carrot seed.

Cameron turned out to be a consummate 'knowledge broker' in the field. Not only could he identify the problem, but he could also find the solution and translate it into practical advice for growers. With a background in farming and a PhD in agronomy, he can effectively communicate science-based solutions to growers.

In practical ways, South Pacific Seeds acts a 'knowledge broker' for its growers. As Craig Garland said, '*we use their equipment and our expertise'* to turn sheep farmers into agricultural farmers. SPS uses a hands-on approach to building agricultural skills.

The Coal River Products Association has been acting as a 'knowledge broker' for its members for many years. The Group invites guest speakers to their regular meetings to address issues of interest to its members. By doing so, the CRPA provides an effective forum for 'knowledge vendors' to reach farmers in the region.

The Association has played a vital role in introducing new land management practices to the area by educating its members and effectively disseminating knowledge about sustainable farming.

The innovators also demonstrate the impact of 'accumulated capability.' They are committed to ongoing research. They build on their knowledge base internally through continuous innovation and by encouraging their employees to constantly seek for better solutions, and externally through accessing specialist expertise and research capabilities as needed.

2.4 Infrastructure Impact

How infrastructure requirements supported (or inhibited) innovation

The Coal River Valley provides a prime example of the transformational impact that major infrastructure projects can have on a region. There is no doubt that the SEIS (and subsequent irrigation projects) was the pivotal factor in changing the agricultural landscape of the Coal River Valley. Access to a reliable source of water at competitive rates was (*and remains*) the single most important factor in retaining an agricultural future for the region. Dry land farming and sheep grazing are no longer a competitive option.

There are important lessons to be learned from the way the decisions to build the irrigation scheme were made (*and not made*).

Major 'hard' infrastructure projects such as the seven-stage SEIS are long-term projects that require long-term commitment. These projects do not fit short-term electoral cycles and the loss of 'institutional memory' that occurs as personnel (both ministerial and bureaucratic) change.

Furthermore, the feasibility and economic impact assessments were in most part based on projections of *existing land uses*. History shows that those predictions were conservative, and more importantly, failed to take into account *future potential* use of land and the impact of introducing new, intensive horticultural crops.

Table 1 compares actual and projected future land use in the area to be irrigated by the SEIS (columns 3 & 4) and land use in 2008 (column 5). The results do not support the assumptions made by the Rivers and Water Supply Commission that field crops such as lucerne, cereals, poppies and canning peas would consistently occupy 80 to 85 percent of the irrigated area with the remaining 15 to 20 percent being used for intensive horticulture such as cultivation of vegetables, orchards, vineyards and turf. The highest margin forms of intensive horticulture account for 39 per cent of land use in 2008 and close to 50 per cent if poppies and seed crops are included.

Table 1: Pre- and Post-Irrigation Land Use by Area (ha)

Crop	Pre-Irrigation land use in CRV (1980 survey)[1] Ha	Actual land use in area to be irrigated (in 1983)[1] Ha	Projected future land use in area to be irrigated (1983)[1] Ha	Post-Irrigation Land Use in the CRV (2008)[2,5] Ha
Fresh Vegetables	88	105	160	280
Stone Fruit	29	20	80	382
Grapes	-	-	-	300
Olives	-	-	-	95
Walnuts	-	-	-	36
Sub-total: high margin horticulture	***117***	***125***	***240***	***1,093***
Cereals	312	47	200	600
Peas	32[4]	-	110	479
Lucerne	84	28	100	137
Poppies	25	8	110	140
Seed Crops	-	5	70	104
Other	-	-		91
Sheep	4,600	685		-
Fat Lambs	-	-	165	170
Beef	986	132	35	-
Dairying	75	70	70	-
TOTAL	**6,231[3]**	**1,100[3]**	**1,100**	**2,814[5]**

[1] *Source: "Current Land Use in the Coal River Valley", "Estimated Present Land Use in the Area to be Irrigated" and "Future Land Use in Area to be Irrigated" tables* in South East Tasmania Irrigation Scheme. Craigbourne Dam Stages 1 and 2 – An Economic Evaluation

[2] *Source:* Davey & Maynard (2008). *Water Crisis in the Coal River Valley.* Preliminary Business Case.

[3] Land use includes crops under on-farm irrigation and dryland.

[4] Grey peas

[5] Note two irrigation augmentation projects have been implemented since the completion of the Craigborne Dam stages 1&2.

Some interviewees cited the critical role of good transport and logistics infrastructure in getting fresh products to market. The proximity to Hobart International Airport was clearly a facilitating factor for some as well.

The Study also illustrates the positive role played by the Coal River Products Association in garnering farmer and public support for irrigation, and in facilitating the transition to new agricultural practices. The CRPA is a good example of how 'collaborative infrastructure' can provide a structure and process to facilitate change and stimulate effective collective action.

2.5 Institutional impact

How regulations and/or social norms supported or inhibited innovation

Although the regulatory barriers were not cited often, many innovators voiced their concern for the future. In particular, they are concerned about the trend to convert agricultural land into housing estates. The Coal River Products Association continues to be vigilant in ensuring that local planning regulations support the continuation of a viable agricultural region in the future.

The continuous existence of the CRPA, the oldest farming group in Australia, is a tribute to the underpinning social values in the region. Formed following the crisis of the bushfires, it continues to provide a place where farmers can learn from and with one another. The Group welcomes newcomers to the area helping them to join the community which also provides existing members with new perspectives and access to new expertise.

2.6 Summary

The story of the Coal River Valley illustrates the impact of innovation capability in realising the potential of a region. The key factors that stimulated innovation in the Coal River Valley – a journey that has taken 40 years and is still underway - are:

- **Community leadership** – Since the late 1960s, community leaders like Bill Casimaty have built a compelling case for changing the agricultural practices of the region. They have mobilised community and political support to realise the potential they believed existed for the region.
- **Irrigation infrastructure** – the history of irrigation in the Coal River Valley demonstrates the enormous potential impact of major infrastructure projects. The transformation of the region would not have occurred without the **SEIS**. Equally important are the availability of transport and logistics infrastructure to facilitate the development of interstate and global agri-food businesses.
- **Innovators** – The region had innovators who led by example through trailing new crops under irrigation on their properties. Once the commitment to the SEIS ensured a reliable source of water, new entrepreneurs were attracted to the area. These entrepreneurs brought capital and expertise to invest in intensive horticultural enterprises. Some of them now act as 'chain captains' in connecting individual growers to global markets. All of them foster a solution-seeking culture in their enterprises.
- **'Knowledge infrastructure'** – Knowledge providers have stimulated and continue to support innovation in the region. In particular, the history of agricultural development in the region highlights the critical role played by **'knowledge brokers'** in linking innovators to science and technology-based solution providers.
- **'Collaborative infrastructure' –** There is no doubt that the **Coal River Products Association** played a vital role in the transformation of the region. The Group continues to be an effective advocate for agricultural interests of the region. It also provides a place where members (existing farmers and new entrants) can learn from and with one another in an informal and welcoming setting.

All agree that if the region does not have a reliable source of water,
'*the Coal River Valley will become another Acton.*'[2]

[2] Craig Garland, South Pacific Seeds, Tasmania

3 CONCLUSIONS AND LESSONS OF THE COAL RIVER EXPERIENCE

This section of the report draws together the lessons of the study and provides insight into how future irrigation and innovation-capability projects should be approached and organised, and to consider what further activities—beyond good water engineering—are needed to ensure such projects realise their *full* potential.

Several important conclusions emerge:

3.1 The greatest proportion of the value created by the addition of irrigation to the Coal River Valley came *not* from support to existing industries and land uses, but from new—and often completely unanticipated—businesses.

In the period between completion of the Craigbourne Dam (1986), with its associated irrigation piping, and the 'Blundstone Report' (1992), the gross margin of the food industry in the Valley (a proxy for economic output) had increased by an annual $1.6 million (69%). This amount is probably not sufficient to justify construction of the project. On that basis, a description of 'hopelessly uneconomic' might appear valid.

Following 1992, however, by 2008, the value of economic output of the Valley's food industry increased by $31.7 million, or 797% (real terms). At that level, the project more than amply returned its cost, and indeed could fairly be described as an economic bonanza.

The clear difference between the two periods is that in the first farmers were primarily adding water to existing land uses; in the second they were utilising water as a springboard for land-use transition.

In short, the project created value mostly not by 'drought-proofing', but by spurring innovation. Critically, it is apparent that the provision of water *alone* was not sufficient to spur this wave of innovation. Water was certainly an essential pre-condition, but for innovation to occur several other factors (identified below and analysed in detail in the body of the report) needed to be present.

3.2 The conventional form of economic analysis employed to assess the project's feasibility prior to its construction—cost-benefit analysis—entirely failed, through repeated iterations, to judge accurately the project's value.

A striking feature of the history of the Coal River region is just how many reports and analyses were conducted prior to commitment to the project, over many years, and how wildly wrong—in the universal direction of underestimation of the benefits—were their conclusions. The project was studied and reported upon serially for more than 40 years prior to an ultimately political decision to proceed. Most reports, including key assessments for Commonwealth agencies, recommended against the project.

The common underlying failure in these studies is an inability of the methodology to incorporate the results of innovation. These studies commonly employed cost-benefit analysis, a methodology in which costs are estimated in advance and then weighed against time- and inflation-discounted returns, with assessments of whether the project is likely to meet desired-return hurdle rates, payback periods, or Internal Rates of Return.

A common flaw in such methodologies is that it is extremely difficult to obtain reliable and convincing data about potential future returns from innovative projects. This is as true in the corporate world as that of public policy. The difficulty is that it is impossible to analyse products and markets that don't yet exist. The preparers of such reports typically, therefore, limit themselves to projecting into the future existing trends in existing fields. Returns from entrepreneurial and innovative projects are often dismissed as 'speculative'. Even if incorporated, such information frequently lacks credibility and is granted little credence.

The upshot is that while the studies are generally reliable about *costs*, they are inherently unrealistically conservative about benefits.

And this is true in reports attempting to predict in advance the likely future performance of irrigation in the Coal Valley. The reports *assumed* a continuance of existing land use, then estimated the additional value to be gained from provision of a water buffer to production. The result was dramatic underestimation of the project's real value.

3.3 A few, in fact a handful, of entrepreneurs exercised a disproportionate impact on value creation, and their experience influenced the decisions of many others.

The great impact of a very small number of individuals, both newcomers to the region and some long-term residents, is strikingly apparent. The same names were repeatedly mentioned to this study's researchers not only as disproportionate creators of new value themselves, but also as mentors and sources of inspiration for others.

The impact of these few leaders results from the fact that value creation came primarily in the form of innovation. Since innovation, rather than expansion or reinforcement of existing activities, was the principal source of value creation, the role of entrepreneurs was magnified. Where few lead, many followed.

An important implication of this observation is that a public policy focus on reinforcing the efforts of the few champions of change can outweigh the returns to be gained from efforts to raise the average or transform the broader culture in a given region.

3.4 While irrigation was a necessary precondition to the transition to new land uses (innovation), to make that transition happen required in addition the presence of other economic capabilities and activities.

For landowners to make a transition to new land uses, that is, to innovate, they needed several additional elements to be present, beyond water:

- Convincing information about alternative possibilities, including markets.
- Access to skills and experience working with novel crops.
- Development of skills and confidence to undertake the broader range of operational, business, and managerial activities often demanded by new business models.

- Availability of finance, in forms appropriate to the product or business model under consideration.
- Access to suitable logistics, which often needed to be considerably more sophisticated for the new high-value—commonly highly perishable or brand-dependent—products than those of wool or sheep meat.

3.5 Risk is the defining challenge in land-use transition, and perceptions of excessive risk were the main obstacle to overcome in effecting that shift.

Greatly higher risk is in general the defining challenge of innovation, and that was shown to be true as well in the Coal Valley experience. Expansion of known activities as a path to value augmentation usually induces less uncertainty than development of new-to-oneself products or services, or even more so those new-to-the-world. This is commonly the most important barrier to innovation.

The primary contribution of the other elements of an effective 'innovation system' in the Coal River Valley was the reduction of the real or perceived risk of new products and processes. The key dimensions of risk faced by entrepreneurial farmers in the Valley were: *entrepreneurial* or *business-management* risk (could the individual involved manage the new business model implied by a shift to a new line of business); *production* risk (would the potential new crops actually grow in the region, cost-effectively); and *market* risk (is there a real market for the product, can it be gotten to market cost effectively). A vital way to assess the propensity to innovate is to consider the dimensions of risk manifest in a given situation, and to assess the effectiveness of external-to-the-firm capabilities to reduce or manage it.

3.6 Deliberately organised community leadership was vital in supporting entrepreneurs and sharing experience.

In addition to the disproportionate impact of a handful of entrepreneurs, a single community organisation—the Coal River Products Association—played an invaluable role in the transformation, at several key times, and on several dimensions. The Coal River Products Association lobbied effectively for the irrigation project itself, set targets for change, supported entrepreneurs, collaborated with demonstration projects, commissioned the influential 'Blundstone' report, and disseminated its results.

The active part played by the Association meant that key decisions were guided at each stage by local knowledge. Initiatives of government had a higher success rate because they were designed in advance to meet the needs of local entrepreneurs. In essence, deep local knowledge and the support of local actors was an important antidote to innovation risk.

Most importantly, the Coal River Products Association and its members played an irreplaceable role in mitigating *entrepreneurial* risk. Farmers attempting innovation could call on support and advice from other members of the Association at each stage. Several reported that such support, at critical moments, was essential to their ultimate success. An important form of assistance was information about potential markets, which mitigated *market* risk.

3.7 External research and demonstration (University and Government) was instrumental in overcoming perceived risk.

A further vital contribution to the reduction of perceived risk, in this case *production risk,* was the impact of demonstrations of new products. The University of Tasmania's decision to trial potential new products enabled sceptical farmers to see the products growing. The University farm showcased cherries, apricots, wine grapes, plums, chestnuts, and apples. The results demonstrated not only that the products would grow cost-effectively in the region, but also provided vital knowledge on which varieties were best suited, and know-how on how best to grow them.

3.8 The availability of high-quality logistics was critical in facilitating the foundation and growth of new businesses.

As the Valley's transition gathered pace, the proximity of the airport emerged as an increasingly important enabling factor. Traditional products from the area had mostly not needed to be exported fresh, or relied on relatively simple refrigeration systems; for the new products freshness, hence speed, was of the essence.

3.9 Lessons for future irrigation projects

The Coal River experience suggests several important lessons for future irrigation projects:

The projects should incorporate entrepreneurship and land-use transition as explicit associated elements from the start*.* That's where the value and returns from irrigation are likely to be created.

Such projects should aim deliberately to reduce the actual and perceived risk confronted by entrepreneurs*.* It is risk of failure, on several dimensions, that will retard the needed shift. Government and non-government entities can assist where they are able to help manage the risks:

Management risk: Training, and even more importantly mentoring, can help.

Production risk: The Coal River experience demonstrates the great value of investment in testing and demonstration projects by non-private entities.

Market risk: Information about potential markets is vital, as is the presence of systems to get products to those markets.

Local knowledge of the innovation system is essential: The unfolding development of the Coal River region highlights the value of deep understanding of specific determinants of innovation capability, at a regional and sectoral level. Whether and how innovation actually occurs—in this instance, whether and how quickly farmers introduce new crops and business models—is very often dependent on the presence of supporting institutions off-farm. Assessing the adequacy and effectiveness of these dimensions of an innovation system is vital for informing policy that works.

4 PUBLIC POLICY IMPLICATIONS

The Coal River Valley experience illustrates the development of innovation capability in a traditional agricultural region. This section summarises public policy implications for the Government and outlines some ways to stimulate regional innovation capability in other regions of Tasmania.

By its very nature innovation entails risk that must be managed to encourage innovative activity. Governments can contribute to creating conditions that reduce risk and stimulate innovation.

Governments can minimise the political risks associated with significant investment decisions such as those required to establish an intensive horticultural enterprise, by providing consistent, long-term direction and bi-partisan support for major infrastructure projects such as the SEIS.

Government – as the regulator

The State Government has oversight of the land-use planning framework. Agricultural enterprises in peri-urban areas have particular challenges. Continued development of intensive horticulture can occur along side rural housing development. However, new residents seeking a 'rural lifestyle' often do not understand the nature of professional farming, eg the use of irrigation equipment, gas guns, heavy equipment on the roads, impact of spraying, etc.

The Government could investigate the possibility of creating an 'Active Agriculture Zone' designation. Buyers of land in the areas so designated would have to sign a caveat outlining the implications of living in the region, eg 'I am aware that I am moving into an Active Agricultural Zone and acknowledge that there will be noise and inconveniences due to the conduct of agricultural enterprises.'

Government – as an investor in the 'innovation system'

Governments play a significant role in developing the 'innovation system'. In particular, they are direct investors in the development of enabling infrastructure.

Infrastructure projects

The irrigation schemes needed to provide a reliable source of water has been critical to the development of higher value agriculture and intensive horticulture in the Coal River Valley.

As the history of the planning for the SEIS shows, the economic rationale for such major infrastructure projects must be based on the *future potential for new land uses*, rather than projections based on current usage patterns.

Once the feasibility and potential impact of a major infrastructure project is determined, the Government is best placed to ensure the financing of the project through its own funding, alignment with Commonwealth funding, or a public-private partnership. The Government, or an outsourced third party, needs to take on the 'investment broker' or 'syndicate manager' role to structure and oversee funding packages.

Accessible information

If an infrastructure project has potential for stimulating new higher value uses, the Government can also play a role in describing what the range of those uses could be based on soil types, climatic conditions, etc. The Blundstone Rural Development Project Report (commissioned by the Coal River Products Group, paid for by private and Horticulture Australia funding) is an excellent example of providing 'public' information for use by private investors.

Knowledge infrastructure

Governments also invest in the development and maintenance of an accessible and responsive 'knowledge infrastructure'. The Government can use its investment to ensure that science and technology providers are effectively linked to innovators.

Traditionally in agricultural development, State Governments provided technical services directly through public research and extension offices. The Tasmanian Government has outsourced these services through the creation of the Tasmanian Institute of Agricultural Research (TIAR), a joint venture with the University of Tasmania. TIAR has tremendous potential to create a 'knowledge infrastructure', linking innovators and researchers with regional, national and international networks.

To reach its potential, TIAR must act as a 'knowledge broker' as well as an R&D provider. Through its investment in TIAR, the State retains its capacity to directly influence the delivery of RD&E services in Tasmania.

Increasingly, professional farmers and farming enterprises are using private R&D service providers who have the specific expertise they need. The Government should ensure that such private providers are included in 'knowledge networks.'

Regional groups, such as the Coal River Products Association, can play a significant role as a 'knowledge brokers' and in building regional innovation capability. The Government could support the development of such groups where community leaders exist to provide local direction and leadership.

Government – as a provider of new venture funds

The Coal River Valley Study shows that access to capital for new ventures, such as intensive horticulture, has been a limiting factor to many existing farmers in the region. The Government could consider increasing access to capital for investment in new, high value agricultural ventures through a 'revolving loan fund' that it would underwrite.

4.1 Regional innovation capability

The Coal River Valley Study tells one story of the development of regional innovation capability. Applying a 'system of innovation' framework has identified the key factors operating in the Coal River Valley to stimulate and support the transformation of the region from traditional dry land farming to intensive higher value horticulture.

The Government can extract the lessons learned from the Coal River Valley experience for application in other regions in Tasmania. It can objectively look at its role in the continued development of the Coal River Valley and other regional areas with the provision that 'not one size fits all' when it comes to developing regional innovation capability.

Innovation capability is best understood through the sector in which it occurs, and particularly, through the structure and functioning of the value chains that operate within the sector. The Coal River Valley Study shows that opportunities for increasing the value of productive agricultural land can be realised, with local growers linked to global markets.

From the State Government's perspective, there are opportunities for increasing the value of the agri-food sector across Tasmania. The Food Industry Council of Tasmania has identified some issues and opportunities across the sector in its recent Industry Strategy.

These potential opportunities could be realised through a combination of local leadership and new investment.

This Study offers the State Government some insights on developing regional innovation capability for consideration as part of a larger framework for stimulating innovation in Tasmania.

1 In partnership with regional development groups, conduct an analysis of potential higher value agri-food development in selected regions in Tasmania. Make the findings public to attract new investors to the region.

2 In those regions with significant potential for higher value agri-food enterprises, assess the health of the 'innovation system' in the region.

3 Identify infrastructure requirements (both hard and soft) that would significantly boost the innovation capability within the region.

4 Establish an 'innovation investment broker' function to develop and manage regional infrastructure investment in partnership with the targeted regions.

5 Review planning regulations to support 'Active Agricultural Zones'.

Appendix 1 – Historical profile and case studies of innovators

Appendix 1 contains the historical profile, data and case study interviews with regional innovators in the Coal River Valley that informed the AIRC's findings, conclusions and advice on regional innovation capability prepared for the Tasmanian Government.

The research of historical records and interviews conducted with regional innovators and community leaders are presented in two parts:

- A historical profile of the agricultural development of the region including:
    - Settlement
    - History of irrigation
    - Agricultural development
    - History of the Coal River Products Group
- Case profiles of six innovators in the region
    - StrathAyr Turf Systems
    - Houston's Farm
    - South Pacific Seeds
    - Qew Orchards
    - Frogmore Creek Wines
    - Domaine A/Stoney Vineyard

HISTORICAL PROFILE OF THE COAL RIVER VALLEY

The Historical Profile provides an overview of the economic and social development of the Coal River Valley from settlement to present day.

It highlights the history of irrigation and contribution of the Coal River Products Group to developing higher value uses of productive agricultural land.

SETTLEMENT

The Coal River Valley was one of the first areas of Van Diemen's Land to be settled by Europeans. When the first European explorers discovered the region in 1803/04, they reported that *"the parkland landscape could be put to the plough"*.

In late October 1803, a government surveyor, James Meehan, arrived at Risdon Cove[3] under the instructions to examine the surrounding area. His role was to investigate soils and natural resources in the region and to identify possible locations for future townships.

The exploration of the Risdon Cove site and the surrounding area in early 1804, led Meehan to Pitt-Water at the southern end of the Coal Valley, where he discovered traces of coal and named the local river – the Coal River.

Prosperous beginnings

James Meehan recognised the agricultural potential of the area. Fertile soils and clear land appeared suitable for crop cultivation. Despite his findings, the agricultural potential of the Coal River Valley was not fully appreciated until the 1840s.

[3] Risdon Cove was at the time the settlement's administrative centre.

The decision to move the settlement's administrative centre from Risdon to Sullivan's Cove in February 1804 caused major setbacks in further exploration of the Coal River Valley and surrounding areas.

With the arrival of new settlers, the need for agricultural land around the Hobart area increased and so did interest in the Coal River Valley's agricultural potential. The relative ease of clearing the native bush, proximity to Hobart and water transport soon started attracting new settlers to the Valley.

The population of the region increased with settlers moving away from Hobart Town in search for land and new transportations of convicts arriving in the area, particularly in the 1830's.

According to the report issued by the Colony Administration Commissioner, John Thomas Bigge, by 1820 there were between 7000 and 8000 sheep in the Valley.

Historical records also reveal a large variety of crops grown in the Valley at the time, such as vines, almonds, walnuts, stone fruit, and hops that became known as "*superior to those imported from England*".[4]

The importance of the Coal River Valley as an agricultural and transit area rapidly increased. On February 23rd 1824, the Township of Richmond was declared and soon became the administrative centre of the region with the building of the Richmond Bridge in 1825, the establishment of Military Officers Quarters, Richmond Court House, a store, hotels, flour mills and impressive private residences.

In the 1840s, the region was proclaimed the "*Bread Basket*" of the colony and by the middle of the century, it had become a major wheat growing area with much of the cereal exported to Sydney.

Years of decline

The prosperity of the Coal River Valley, and Richmond as its administrative centre, was deeply affected by the construction of the causeway across the Derwent River at Bridgewater in 1849. The development removed the city from the main transit route from the south to the north of the colony.

In 1872, the completion of the Pitt Water causeway led to further reduction in transit numbers through Richmond. The situation deteriorated again in 1876 with the construction of the railway from Hobart to Launceston. The railway ran from Hobart, through Bridgewater and Campania, where it turned up north. As a result of these infrastructure developments, Richmond and the Coal River Valley remained a quiet rural area with little change for many years.

Until the 1930s, the land use in the Coal River Valley was dominated by dryland cropping and grazing, with a majority of enterprises specialising in cereals and sheep. Only small parts of foothills and slopes were utilised for production of apricots.

Overgrazing and land cropping resulted in widespread soil erosion in the Valley. Weed infestation and devastation caused by rabbits only added to the worsening condition of land in the region.

[4] Margaret Mason-Cox (1994). Lifeblood of a colony: a history of irrigation in Tasmania. Hobart

Post-war Period

The post-war boom, improved pastures and rabbit control halted the general decline of the area. Wool, fat lambs and beef became the main sources of income. During the late 1950's several modern dairy operations were established in the district.

However, by the 1960s, agriculture in the Coal River Valley was once again in a depressed state. The situation deteriorated considerably in February 1967 when 37,800 acres of land were destroyed in the bushfires. The disaster had a devastating impact on the communities in the region with many symbols of early progress lost in the fire.

The situation improved in the 1970s when Richmond gained recognition as a heritage area with Georgian Colonial architecture and convict history. The city, with its local art and craft galleries, became a popular tourist destination and once again was an important place, this time on a tourist route.

Years of Drought

October 1978 marked the beginning of one of the worst droughts in the history of Southern Tasmania. The Coal River Valley was officially drought-declared in 1979.

The drought of 1979-1983 had a devastating effect on the region. As reported in the *Tasmanian Mail* on 11th January 1979:

> *"The Coal River is only a river in name, being but a chain of pools and water-holes, and in most instances they are either dry or fast drying up."*[5]

The cost of re-sowing pastures was approximately $4.5 million, with the cost of restocking around $3 million. Individual farmer losses in the South East of Tasmania ranged from $75,000 to $200,000.

The severe drought and increasing demand for water for irrigation, domestic use and recreational purposes accentuated the need for an irrigation scheme that would supply water to the drought-prone South East of Tasmania.

When the government's efforts to battle the drought by cloud seeding failed, the need to urgently review water supplies for the region resurfaced.

HISTORY OF IRRIGATION IN THE COAL RIVER VALLEY

The first dams on the Coal River were build some time before the 1880s. Built on a flat river bottom, the dams were susceptible to heavy flooding and many of them were soon destroyed.[6]

One of the earliest attempts to irrigate land in the Coal Valley was during the 1840's, at *Glen Ayr*, Richmond. By 1849, *Glen Ayr* had 29 acres of Virginia tobacco and hops under irrigation. Construction of a large dam on the farm and *"water laid on by pipes"*[7] to the farmhouse were considered a complete novelty in the region. In 1853, a major failure of the irrigation system, followed by a purchase of the farm by Bassett Dickson, caused the dam to fall into disuse.

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[5] Tasmanian Mail, 11-01-1979

[6] Margaret Mason-Cox (1994). Lifeblood of a colony: a history of irrigation in Tasmania. Hobart

[7] Hobart Town Courier, 03-11-1849

Another attempt at constructing an irrigation system was made at the Campania Estate during the 1870's, with 150 acres under irrigation.

The first permanent and successful dam on the Coal River was constructed at Richmond during the late 1930's. The project offered jobs to unemployed men during the Great Depression. The dam was initially used for irrigating nearby market gardens.

Although the potential for development of a large-scale irrigation scheme in the Coal River Valley was recognised in the 1880s, it was not until the 1950s that the first serious steps towards the development were undertaken.

An engineer from Victoria, E. P. Kendall, was assigned to examine possible sites for the dam construction between Richmond and Campania. The investigation led Kendall to conclude that *"sufficient water could be made available to fully develop this valley of 5000 acres under irrigation"*[8].

In Kendall's view, the irrigation scheme would not greatly affect the productivity of the district, as, according to his predictions, the majority of landowners would only use irrigation during dry periods to hold their stock. Instead of building a large irrigation scheme, Kendall proposed a construction of a small dam that would boost the flow of the Coal River during dry periods.

After careful investigation, Kendall concluded that for the region to grow and develop its strong agricultural potential, a comprehensive irrigation scheme that would supply water to the South East of Tasmania had to be developed. His proposal was submitted to the Water, Sewerage and Drainage Board in 1951. It was rejected based on the lack of sufficient resources to facilitate a development of such magnitude.

South East Irrigation Scheme (SEIS)

For the next thirty years, the plan to build a comprehensive irrigation scheme in the South East of Tasmania was examined by various government bodies and departments.

The Bureau of Agricultural Economics prepared the first assessment of the proposed scheme in 1964. Other studies included the 1971 and 1974 reports by McColl and Associates, with the latter one updated by the Agricultural Economics Section of the Department of Agriculture in 1980 and revised again in 1981.

The push for irrigation in the Coal River Valley gained momentum in the 1970's when Sir Harold Cuthberston, Bill Casimaty and other farmers joined forces in a campaign to secure the future of the region by building an irrigation scheme.

In 1973, an opinion census revealed that 72% of landowners in the area wanted the irrigation scheme proposal to be presented to the Federal Government for funding and approval. Approximately 65% of respondents indicated their intention to irrigate if such scheme became available. Those who opposed to the idea were motivated by the fact that if the development went ahead, parts of their properties would have to be flooded.

Until the early 1980s, the value of the proposed irrigation scheme was mainly considered in relation to the existing traditional agricultural enterprises – fat lambs, vegetables, dairy and cereal. Under this approach, the scheme was considered "not

[8] Margaret Mason-Cox (1994). Lifeblood of a colony: a history of irrigation in Tasmania. Hobart

viable" as the irrigation water would only be used to sustain existing enterprises during dry periods. Since the early 1980s, it became apparent that the overall viability of the scheme was highly dependent on the introduction of a range of new crops to the area– essential oils, certified seeds, and stone fruits.

On 22nd May 1981, a meeting of sixty farmers from the district took place at Richmond. After suffering one of the most severe droughts in the history of the area, they agreed that *"the time has come to make a decision on the Coal River project once and for all"*[9]. As a result of the meeting, a motion was passed for the State Minister for Primary Industries, Dr. Julian Amos, to approach the Federal Minister for National Development, Senator Carrick, to grant the necessary funding for the proposed scheme.

Despite the urgency of the development, the construction of the dam was not the highest priority for the State government at the time, with the main focus directed towards the construction of the Warner's Creek Dam, near Deloraine.

The importance of providing irrigation water to farmers in the Coal River Valley diminished over time and the government yet again, abandoned the project.

Stage 1 of the SEIS

The proposal to build the irrigation scheme was reviewed again in May 1982. The site for the dam that would form the first stage of the South East Irrigation Scheme was identified at Craigbourne, near Colebrook. It was the same site that was surveyed in 1959 by Joe Piscioneri, an engineer for the Rivers and Water Supply Commission, who later designed the Craigbourne Dam.

In 1983, there were approximately 115 properties within the project area, with only 40 of them assessed as supporting full-time farming operations and thus viable for adopting irrigation practices.

In 1983, following the election of the Gray Government, the South East Irrigation Committee was established to carry out an initial study of an irrigation scheme that could supply much needed irrigation water to the drought-prone South East of Tasmania. The Committee included representations of the Treasury Department, the Department of Agriculture, the Rivers and Water Supply Commission and Bill Casimaty from the Coal River Valley Products Association.

The South East Irrigation Committee, responsible for reviewing all possible options of providing water to the area, decided that the most suitable method for irrigating the South East of Tasmania would be by pumping water from the Derwent River due to continuous and reliable water supply. Economic constraints, however, forced the Committee to abandon that idea and pursue an option of using local catchments instead.[10]

Subsequently, the Committee recommended that the scheme should be comprised of seven stages that would provide water to the Jordan and Coal River Valleys, as well as to Iron Creek and its tributaries. The first stage of the scheme would involve the construction of the Craigbourne Dam and cost approximately $6.5 million.

In February 1983, the Federal Minister for National Development and Energy, Senator Sir John Carrick, and the State minister for Water Resources, Mr. John

[9] Tasmanian Country, 29-05-1981

[10] Casimaty, B.G. (1983). Case Study for the Coal River Irrigation Seminar: "Droughts in Tasmania"

Beswick, announced that the Craigbourne Dam would form a part of the seven-stage South East Irrigation Scheme.

The Australian Labour Party also announced its support for the development of an irrigation scheme in Tasmania. The Opposition Leader, Mr Hawke, declared that irrigation schemes in Tasmania, costing more than $50 million, could be build under the Federal Labour Government.

> *"The ALP Economic package for Tasmania encompasses such water and irrigation schemes as Warners Creek, Coal River/South-East and Cascades."*
>
> *"In relation to the Coal River/South-East scheme, the ALP recognises that this scheme has potential far beyond the first stage, that is the Craigbourne Dam" and the "Federal Labour Government will assist with further full investigation of all possible stages."*
>
> *"The ALP recognises the agricultural potential of South-Eastern Tasmania, and if it is shown by these investigations that the further stages are viable, then every consideration will be given to the construction of these stages over the long term."*[11]

In 1983, the Federal Government offered to finance the construction of the Craigbourne Dam under a grant from the Commonwealth Bicentennial Water Development Program, with Stage 2 of the SEIS coming under the National Water Resources Program with State and Federal funding. The decision to provide funding for the scheme was made on the basis that much of the planning work had already been done.

The Tasmanian Government failed to secure the deal for the Commonwealth funding for the project due to major setbacks caused by the potential flooding of the Historic Colebrook Park in the Coal River Valley. Subsequently, the Federal Government withdrew from the project.

According to the Minister for Resources and Energy, Senator Peter Walsh, the project was "hopelessly uneconomic", with the cost of irrigation water estimated to be $200 per Megalitre. The Federal Government "refused to fund the scheme on the grounds that it was uneconomic" and it would require "an annual taxpayer subsidy to individual farmers"[12] of around $40,000 a year.

The decision to proceed with the first stage of the proposed seven-stage South East Irrigation Scheme, based upon storages on the Coal River, Jordan River and Iron Creek, was made by the Tasmanian Government Cabinet on 9th August 1983.

In September 1983, the State Government provided initial funding to build the 12,600Ml Craigbourne Dam and expressed its full commitment to its construction, regardless of the availability of Federal funding.

> *"Irrespective of whether or not there was Federal funding, the State Government would definitely build the Craigbourne dam…"*[13]

The total cost of the first five stages of the South East Irrigation Scheme was estimated to be around $22 million with the remaining last two stages expected to cost another $29 million.

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[11] ALP Tasmania News Release, 04-03-1983

[12] The Mercury, 11-10-1985

[13] *Craigbourne Certain*, Tasmanian Country, 16-09-1983

In the early 1984, the government appointed international engineering consultants, Gutteridge Haskins and Davey, to design the dam. Later that year, the State Government allocated $5,800,000 towards the construction of Stage 1 of the SEIS.

The works on the construction of the Craigbourne Dam began in April 1985. The construction of the Craigbourne Dam was delayed due to various issues including compensation for farmers losing land to the dam and the proposed construction of a levee around the historic *Colebrook Park* homestead[14], later abandoned due to costs.

The Craigbourne Dam was completed on 7th August 1986. The official opening took place on 17 November 1986. The dam had a storage capacity of 10,000 mega-litres and could provide irrigation water to over 3,800 hectares of irrigable land in the Coal River Valley. Following construction of the Craigbourne Dam, irrigation water was made available to 64 properties within Stage 1 of the SEIS District.

At full supply level, the surface area of the lake was around 210 hectares. It was predicted that heavy, unseasonal rainfall within the catchment area of the dam would cause flows sufficient to fill the dam within a few days. Average yearly rainfalls were expected to adequately fill the storage within a given year.[15]

Stage 2 of the SEIS

In 1987, the State Government allocated $800,000 to commence the works on Stage 2 of the SEIS, with another $2 million allocated in the 1988-89 State budget.

The second stage of the scheme would service 4,500 hectares of agricultural land in the Cambridge – Tea Tree area. It was expected that 500 hectares of intensive crops, such as vegetable seeds, stone fruits, fresh vegetables, grapes and essential oils, would be under irrigation each year.[16]

The second stage of the scheme did not increase the available water supply, but allowed for distribution of water from the dam to the lower parts of the Valley via a pipeline and a multi-pump pumping station at the Richmond Weir. Stage 2 was expected to be completed by 1990 at a cost of $4,100,000.[17]

The Rivers and Water Supply Commission was responsible for investigating proposals and implementation of Stage 2 of the scheme. According to the Commission, the majority of farmers in the project area expressed strong support for the scheme. The RWSC in co-operation with the State Department of Agriculture determined the total area of irrigable land for the Stage 2 of the SEIS. A detailed soil survey of the Stage 2 area was scheduled for the 1988-89 financial year.

In 1989-90 the pump station at Richmond and the pipeline were completed. The second stage of the SEIS supplied water to another 56 farms in the Coal River Valley.

In 2000, the scheme had 132 members with water rights of 3,221ML. Since the completion of the scheme, numerous studies have been done on its operations and reliability. There have also been numerous studies investigating other feasible

[14] Tasmanian Country, 26-10-1984

[15] Rivers and Water Supply Commission, Thirtieth Annual Report for the Year 1987-88.

[16] CRPA Correspondence, 1989

[17] The Mercury, 24-09-1987

options of supplying water to the area, as the dam has not been able to reliably service areas of Stage 1 and 2 of the SEIS.

Demand for irrigation water in the Coal River Valley has been increasing since the completion of the Craigbourne Dam and the transition from dryland cereal and livestock grazing enterprises to intensive crops under irrigation.

Daisy Bank Dam – Connection to Hobart Water

In order to ensure continuity of water supply to the area covered by Stage 2 of the scheme and improve the reliability of water supply to Stage 1, a new dam was constructed at Daisy Bank during 2000-01. Water to the dam has been supplied during off-peak season through a pipeline from Hobart Water and has increased the allocation of irrigation water to Stage 2 of the SEIS by 1000 megaliters.

Clarence Re-Use Water Scheme

In 1996, the Clarence City Council identified the potential for wastewater re-use within the area serviced by the second stage of the SEIS. The $16 million scheme involved piping treated wastewater from the Rosny Wastewater Treatment Plant for use in the Coal River Valley and was set to boost agriculture in the region.

The strategy focused on providing treated wastewater commencing with an allocation of 420Ml in 2005 and increasing to 3,600 by 2025. The proposed scheme was expected to more than double the existing Stage 2 annual water supply of 1,500ML. When completed, the scheme had a potential to irrigate up to 6500ha.

Works on the wastewater re-use scheme commenced in August 2003. The project was a joint initiative of the Clarence City Council, the Federal Government and landowners in the area. The scheme was expected to provide a guaranteed continuity of irrigation to farmers in the region and enable them to utilise areas they previously had not been able to cultivate. Another advantage was the nutrient content of re-used water that would result in reduced need for fertilizers.[18]

One hundred and thirty five property owners in the district registered to receive water from the scheme as soon as the works on the project started.

Criticism of the SEIS

Since the beginning, the proposal to build an irrigation scheme that would provide much needed irrigation water to the South Eastern Tasmania attracted a great deal of attention and criticism from both members of the public and political parties.

Criticism of the proposed scheme was mainly directed towards the economic viability of the scheme and the relatively small number of landowners that would benefit from the scheme.[19]

The $7,000,000 cost of the first stage of the SEIS was criticised by the State Opposition, as being too expensive, considering it would benefit only 50 farmers in the area. The Party requested that the construction of the Craigbourne Dam be delayed and a comprehensive economic analysis of the development made and published.

[18] Information Bulletin, 1521-6600,10-05-1996

[19] Coal River Irrigation Scheme: Fulfilling its Potential

The State Government argued that the economic benefits of the dam would be realised in the long term and the multiplier spin-off effect would enhance the region and the State's economy.[20]

> *"Schemes such as the South-East Irrigation Scheme will provide a major boost to Tasmania's rural sector in the years ahead. The scheme should not be seen in isolation but as part of the overall rural economy. It will complement the State's other irrigation areas, not compete with them."*[21]

Producers from the north of the State were concerned that the development could potentially cause "over-supply problems". According to the Tasmanian Farmers and Graziers Association there was little support for the scheme outside of the Coal River Valley and, in their view, no more irrigation schemes should be constructed around the State.

In response to the questioning of the economic viability of the irrigation scheme, the Coal River Products Association launched a campaign to promote new crops in the area to illustrate its agricultural potential. According to the secretary of the Association, Mr Geoff Crane, *"Trials are being carried out and when water becomes available from the first stage of the scheme, farmers would be ready to proceed 'full steam ahead' with commercial areas of the new crops."* He also pointed out that *"within a three month period… three overseas experts representing American, French and English firms, have expressed interest in growing stone fruits, flowers and seed crops in the area."*[22]

AGRICULTURAL DEVELOPMENT IN THE COAL RIVER VALLEY

Climate

The Coal River Valley is characterised by a relatively warm and dry climate. The average annual rainfall is approximately 500 millimetres compared to potential evaporation levels of 1300 mm per annum.[23] The mean rainfall does not exceed 50 millimetres from January until June. In the following months, rainfall is not greater than 100 millimetres per month.[24] High evaporation rates, which in most months exceed the rainfall[25], make the Coal Valley one of the driest regions in Tasmania.

The dry climate of the region affects river flows. Prior to the construction of the Craigbourne Dam in 1986, the Coal River was ephemeral for its entire length, particularly during summer months (November to April). Historical records show that the river's stream flow has been highly dependent on annual rainfall in the catchment.[26]

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[20] The Mercury, 24-07-1986

[21] Gray, R. (1985). The Examiner, 21-06 -1985

[22] "*South-East dam: a 'subsidy' and 'support' water scheme*", Tasmanian Country, 22-03-1985

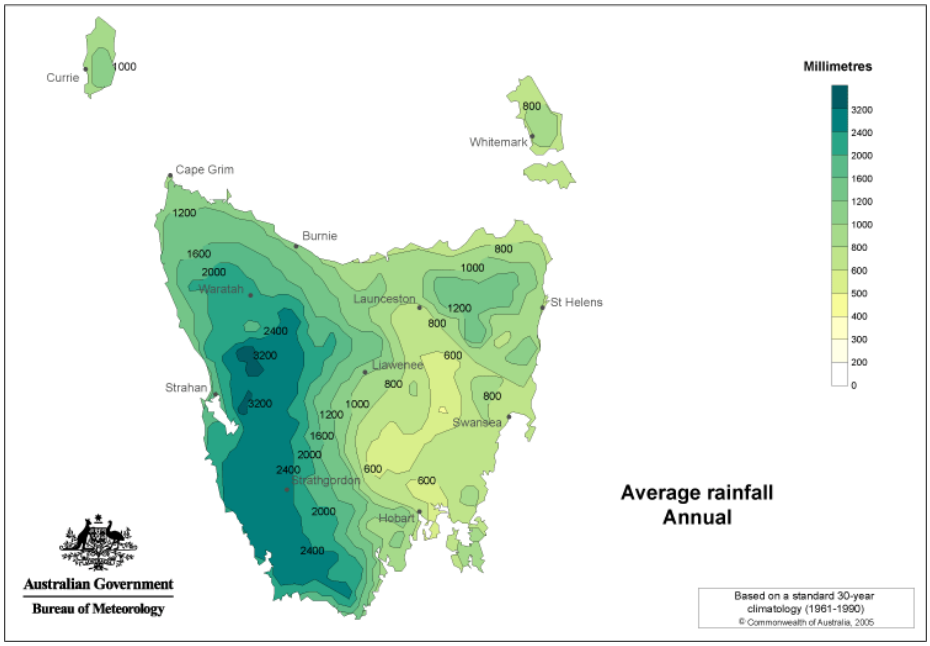
[23] Grose, C.J. (2003). *Land Degradation and Salinity Risk Investigations in the Coal River Valley, South East Tasmania.* Department of Primary Industries Water and Environment, Tasmania, Australia.

[24] http://www.bom.gov.au/cgi-bin/climate/cgi_bin_scripts/annual-monthly-rainfall.cgi, Retrieved 07-11-2008

[25] Grose, C.J. (2003). *Land Degradation and Salinity Risk Investigations in the Coal River Valley, South East Tasmania.* Department of Primary Industries Water and Environment, Tasmania, Australia.

[26] Gurung, S. and Dayaratne, S. (2003). *Hydrological Analysis of the Coal River Catchment. A report forming part of the requirements for State of Rivers reporting*. Tasmanian Department of Primary Industries, Water and Environment

Figure 1: Average annual rainfall in Tasmania



Source: www.bom.gov.au/climate/averages/, Retrieved 07-11-2008

January and February are the warmest months with average maximum temperatures of 22^{0}C. Average summer temperatures inland at Richmond and Campania are generally higher than in the southern parts of the Valley that are more influenced by sea breezes. This characteristic makes the higher part of the Coal River Valley suitable for some grape varieties that cannot be successfully grown in other parts of the State.

The Coal River Valley is generally frost-free. Frosts, however, can occur during June, July and August. Intensity and frequency of frosts increases from Richmond to Colebrook. July has the lowest mean minimum daily temperature of 3.9^{0}C at Hobart Airport. Day length in the region varies from 9 to 15.3 hours.

Despite its advantageous warm conditions and long hours of sunshine, the region is windy. The prevailing wind is the north-westerly. During summer months, this wind is counteracted by sea breezes from the south-east and south.[27]

Soils

Soils in the Coal River Valley range from wind blown sands to heavy, cracking clays. A major proportion of the Valley, however, is characterised by duplex or duplex gradational soils with predominantly clayey, poorly structured subsoils. A high level of clay in subsoils increases their susceptibility to structural breakdown if not managed properly. Special management is also required on light sandy soils that are susceptible to wind erosion.

In is not uncommon for different types of soils to be found within the boundaries of one property. Irregularity of soil types dictates irrigation and soil management techniques, choice of crops and the use of fertilisers to suit individual soil type.

Variety of soil types largely determines types of crops that can be grown in the region. Perennial crops, such as fruit trees, vines and very intensive vegetable crops

[27] Davey & Maynard, (1992). *The Blundstone Study*

are generally less restricted than annual crops, however their location in the Valley is influenced by access to irrigation water.

Land degradation and salinity issues

According to the Coal River Catchment Management Strategy (1998), "virtually all forms of land degradation can be found within the valley". The most common are wind erosion, tunnel and gully erosion, soil structural decline, and salinity.

Soil salinity was a major concern when the irrigation scheme was constructed due to poor drainage of some soils.

The 2003 Land Degradation and Salinity Risk Investigations in the Coal River Valley Report concluded that the current level of agricultural activities in the region has not resulted in increased ground water levels and has not affected its quality.

The investigation did reveal a significant salinity risk, particularly on upper terrace levels.[28] While salinity is evident in the Coal Valley, salt levels in the root zone remain low and may only affect salt sensitive crops.[29]

Salinity issues have been managed with the assistance of the Coal River Valley Landcare Group, established in 1991. The organization has been responsible for promoting sound and sustainable agricultural practices amongst farmers in the area with major emphasis on drainage works if required.

An on-going programme to monitor depth and quality of ground water and salinity levels has been required to ensure the sustainable development of the region.

Pre-irrigation land use in the Coal River Valley

Prior to the construction of Stage 1 of the South East Irrigation Scheme, a majority of the land in the region was dominated by sheep enterprises for wool production, prime lambs and beef cattle. There were three dairy units operating within the area to be covered by Stage 1 and 2 of the SEIS. Small vegetable producers for supply to the Hobart markets were also present. Barley and oats were the principal cereal crops, with lesser areas of wheat and triticale also grown. Other field crops of importance were oil poppies, canning pea seeds and grey peas.[30]

Land use in the Coal River Valley based on the 1980 survey of producers is presented in *Table 2*.

[28] Grose, C.J. (2003). *Land Degradation and Salinity Risk Investigations in the Coal River Valley, South East Tasmania.* Department of Primary Industries Water and Environment, Tasmania, Australia.

[29] Grose, C.J. (2003). *Land Degradation and Salinity Risk Investigations in the Coal River Valley, South East Tasmania.* Department of Primary Industries Water and Environment, Tasmania, Australia.

[30] South East Tasmania: Irrigation Scheme. Craigbourne Dam Stages 1 and 2 – An Economic Evaluation

Table 2: Land Use in the Coal River Valley, 1980

Enterprise		Total area (ha)
Sheep	Dryland	4,564
	Irrigated	36
Beef	Dryland	973
	Irrigated	13
Dairying		75
Lucerne	Dryland	44
	Irrigated	40
Barley	Dryland	120
	Irrigated	13
Poppies	Dryland	19
	Irrigated	6
Oats	Dryland	109
	Irrigated	12
Wheat	Dryland	11
Triticale	Dryland	47
Grey Peas	Dryland	32
Vegetables	Irrigated	88
Orchard	Irrigated	29
Total		**6,231**

Source: South East Tasmania Irrigation Scheme. Craigbourne Dam Stages 1 and 2 – An Economic Evaluation

According to the 1983 estimates (see Table 3 below), high value horticultural crops occupied only 11 percent of the 1,100 hectares planned to be irrigated by Stage 1 and 2 of the SEIS. Approximately 975 hectares in the area to be irrigated by the scheme were under cultivation of lower-margin crops, with only 120 hectares under on-farm irrigation.

A range of crops that could be grown in the Coal River Valley under irrigation was determined based on a soil survey conducted by the Tasmanian Department of Agriculture in collaboration with the University of Tasmania. A wide range of other factors was also considered, such as wind, sunlight hours, topography, frost, rainfall, temperature and availability of water.

The variety of crops that could be successfully cultivated in the region under irrigation and sustainable management of soil types was significant. The availability of irrigation water increased the potential for supplying interstate and international markets with high quality essential oils, such as peppermint, boronia, pyrethrum, parsley, caraway and spearmint.

The scheme also opened up new opportunities for production of stone fruits, apples and pears, strawberries, raspberries, blueberries, Chinese Gooseberries, wine grapes, blackcurrants, fresh vegetables, vegetables for seed production, flowers for bulbs and cut flowers. Many of these crops were already present in the area or under development. The supply of irrigation water allowed for further expansion and intensification of the existing crops and introduction of others.

According to the Rivers and Water Supply Commission, in 1986/87, the following crops were being grown in the area covered by Stage 1 of the SEIS:

Pasture, oats, barley, poppies, canning pea seed, lucerne, wheat, peppermint, maize, chou mollier, fennel, pyrethrum, pink eye potatoes, broad bean seed, chipping

potatoes, onion seed, Brussel sprout seed, cabbage and parsnip seed, lettuce, apples and apricots.[31]

Even before the completion of the Craigbourne Dam, expressions of interest from interstate and overseas companies to invest in new crops were being presented to farmers in the region through the Coal River Products Association.

To promote the agricultural potential of the region and attract investment, the Coal River Products Association produced a film detailing the potential of the area in horticulture, viticulture, stone fruit, essential oils and cereal.

The following table illustrates the change in land use in the Coal River Valley from 1983 to 2008 and includes a projection to 2013.

Table 3: Actual and projected Land Use Change in the Coal River Valley

Land Use - Coal River Valley	Area Ha	Share of area %	Avg GM/ha [5] 2008 $/Ha	Total GM 2008 $
Projected future land use in the area to be irrigated by Stages 1& 2 SEIS (1983)[1]				
High margin horticulture (all irrigated)[4]	125	11.4	15,816	1,977,000
Other agriculture (120 ha irrigated)[6]	975	88.6	381	371,475
	1,100			**2,348,475**
Pre-Blundstone Study "low margin" irrigated land use (1992)[2]				
High margin horticulture[4]	126	11.4	21,457	2,710,019
Other irrigated agriculture	983	88.6	1,294	1,271,614
	1,109			**3,981,633**
Early Post-Blundstone Study irrigated land use (1995)				
High margin horticulture[4]	344	19.2	15,241	5,239,860
Other irrigated agriculture	1,442	80.8	1,334	1,923,940
	1,786			
Current "high margin" irrigated land use (2008)[3] - note augmented irrigation supply post 1995				
High margin horticulture[4]	1,093	38.8	30,651	33,501,543
Other irrigated agriculture	1,721	61.2	1,284	2,209,764
	2,814			**35,711,307**
Intended irrigated land use (2013) (Coal River Products Association ests)				
High margin horticulture[4]	1,295	24.5	29,033	37,598,000
Other irrigated agriculture	3,996	75.5	1,339	5,010,300
	5,291			**42,608,300**

1 Land use ha 1983 - SE Tas Irrigation Scheme stages 1&2 Economic Evaluation Tas Dept Ag table 4, 1983

2 Land use ha 1992 - Blundstone Study Vol 1 page 19

3 Land use ha 2008 - Enhancing Irrigation Water in SE Irrigation District (prelim), Coal River Products Assoc Nov 08

4 High margin horticulture includes stone fruit, grapes, olives, fresh vegetables, walnuts

5 Gross margin (GM) for grapes, stone fruit, dairy, beef, sheep are AIRC est, other refer Crop Gross Margins, DPIW

6 Gross margin for other agriculture in 1983 is overstated as margins are for irrigated (not dryland) agriculture

Post-Irrigation Land Use

In 1992, land use in the region was dominated by medium margin crops, such as peas, pyrethrum, essential oils, lucerne, seed crops and poppies. These crops accounted for over 60 percent of irrigated land in the region, while low-margin crops, such as cereals, lupins/beans, or lentils accounted for 28 percent of irrigated land. The area of high margin, horticultural crops remained unchanged.

[31] Rivers and Water Supply Commission, 1986/87

The emphasis on low and medium gross margin agriculture in the early post-irrigation period (up to 1992) could have resulted from a general risk aversion of traditional farmers and high capital cost of investing in on-farm irrigation infrastructure. As suggested in the 1992 Blundstone Rural Development Project Report, the optimal use of the irrigated land was not being exercised.

The Blundstone Rural Development Project Report[32], completed in June 1992, identified the potential for higher value horticultural development in the region. The increase in the area of high margin horticultural crops from 126 hectares in 1992 to 344 hectares in 1995 can be attributed to farmers capturing the opportunities identified by the study.

Over the period 1992 to 2008, an additional 967 hectares of high margin crops returned $30.8mln in additional value while an extra 738 hectares of low and medium margin crops increased gross margins by only $0.7mln.[33] By 2008, high gross margin agriculture accounted for a massive 94.4 percent of the total gross margin. According to current predictions of the Coal River Products Association, the total area under cultivation will increase to 5,291 hectares by 2013. The area of high margin crops is expected to increase only by around 200 hectares, while still accounting for almost 90 percent of the total gross margins.

Overall, the irrigation scheme facilitated the transition of land in the Coal River Valley but it was not until the Blundstone Report that the real benefits of the scheme started to become realised. Land owners in the region had to perceive the risk of introducing new high margin crops as relatively low or allow new entrants to buy or lease land. Information about potential crops and gross margins provided by the Blundstone Report along with identification of potential markets and successful introduction of horticultural crops by the existing entrepreneurs reduced the overall risk of investment. The most recent increase of horticultural crops area may be attributed to the entrepreneurial spirit of new investors.

Blundstone Study

In 1991, the Coal River Products Association applied for a research grant with the Horticultural Research and Development Corporation to undertake a study of horticultural potential of the region. The Corporation offered its financial support for the studies of the Physical Resources of the Coal River Valley and Horticultural Development of the Coal River Valley.

The Blundstone Study played a vital role in the expansion of higher value agriculture and development of horticultural crops in the region. The report identified crops that could be successfully grown in the area for interstate and overseas markets.

The Blundstone study looked at a range of intensive horticultural crops suitable for introduction to the Coal River Valley. Higher value crops were selected based on their characteristics to suit the soil types, topography and climate of the region.

Fresh Vegetables

The Blundstone Study revealed potential for further development of vegetables for the fresh market. Proximity to Hobart offered a significant advantage in supplying

[32] Blundstone Rural Development Project, Davey & Maynard Agricultural Consulting, June 1992.
[33] The number of hectares of low and medium gross margin agriculture on irrigated land in 1992 that was transformed into higher margin agriculture by 2008 is not available.

fresh vegetables to the Hobart market. Availability of land and irrigation water as well as suitable climate conditions were also favour for the development of fresh vegetables production in the region.

The Study also identified potential vegetable market niches, such as winter lettuce, washed potatoes and bunched lines (carrots, silver beet, beetroot, leeks and spring onions).

Competition from the existing suppliers in the northern parts of the State, unreliability of irrigation water, high capital requirements and high level of expertise in production and marketing were considered potential obstacles to the development of fresh vegetable sector in the district.

Successful development of a fresh vegetable industry in the Coal River Valley was going to be largely dependent on the ability of producers to introduce advanced management techniques to complement investment in specialised machinery and facilities upgrade. The Study also identified that collective commitment from growers was essential to securing ongoing contracts.

Vegetable Seeds

The potential for development of large-scale seed cropping enterprises in the Coal River Valley had been recognised for some time. The climate of the Coal River Valley offers suitable conditions for growing vegetables for seed production due to dry ripening conditions that ensure that seed crops have maximum germination percentages. The relative isolation of the Valley also makes it a relatively disease-free region.

Successful establishment and operation of seed producing enterprises in the district required major investment not only in sowing machinery, irrigation and harvesting equipment, but also in acquiring new skills and knowledge.

Some farmers in the valley already had some experience in growing crops for seed production with most of their expertise self-taught.

Stone Fruits

The potential of the Coal River Valley to become a major stone fruit producing area was recognised. The advantage of the region is the late harvesting season that enables the produce to be exported to the mainland during their off-season.

This late production season also limits interstate and overseas competition, particularly for apricots, cherries and nectarines. Demonstration orchards of cherries, apricots, wine grapes, plums, chestnuts and apples were planted at the University Farm.

The Coal River Valley region is particularly suitable for apricot orchards as it is generally frost-free and offers preferable dry conditions during the flowering season. As there are only a few other areas in Tasmania suitable for growing apricots, the Study recognised that the region had the potential to become the major supplier of apricots in Australia.

Viticulture

Climate conditions, availability of land and irrigation water, and proximity to Hobart also contribute to the attractiveness of the Valley as a wine region. Furthermore, the attractiveness of the Coal River Valley, and Richmond in particular, as a tourist destination added to the potential development of a wine region in the Valley.

Vineyard expansion was already well under way in the region when the Blundstone Report was released, with a number of estates established with an increasing interest from interstate and overseas investors searching for suitable sites in the region.

The wine industry was identified as an area that would particularly benefit from outside investment. It was recommended that the potential for premium wine production should be strongly promoted interstate and internationally.

In summary, the report encouraged existing farmers in the Coal River Valley to focus on long-term agricultural potential, particularly of higher value horticultural enterprises that would take advantage of the agricultural conditions offered by the valley. Strong co-operation between farmers, especially in relation to sharing equipment and storage facilities due to high cost of financing was also encouraged.

The opportunities identified by the Blundstone Study attracted new investors to the region. In 1995, multi-million dollar investments were made in stone fruit and viticulture. Approximately 160,000 stone fruit trees were planted in the area covering an area of around 100 hectares.[34]

HISTORY OF THE COAL RIVER PRODUCTS ASSOCIATION

The Coal River Products Association was established in 1967, following the bushfires that devastated the area. The objective of the organization was to set a new direction for the region and to provide relief and aid to local farmers.

The role of the group in shaping the development of the region cannot be underestimated. It became an important “knowledge broker” for its members and an effective representative of their interests in public policy debates.

Early history of the association

In 1967, Bill Casimaty went to England on a Nuffield Farming Travelling Scholarship. During the visit, he attended a meeting of the “Grasshopper Club”. Inspired by the way the group shared knowledge and experience, Bill thought of setting up a similar organization back in Tasmania.

After returning to Tasmania in October 1967, Bill Casimaty and Jim Burn encouraged farmers in the Coal River Valley to attend an inaugural meeting of the Association. Potential members were drawn from a telephone directory from the section for Richmond and Campania and invited to participate in the meeting. Bill was elected the Chairman and Jim Burn, Secretary of the group.

The structure and organization of the group were based on the British “Grasshopper Club” model and the local Rotary Club, of which Bill was a member.

To attract new members and ensure good attendance, guest speakers were invited to regular meetings of the Association. Formal dress was required during the early meetings to create a business-like atmosphere. An annual membership fee was applied to cover the cost of meals and ensure regular attendance.

[34] Letter from Bill Casimaty to Dennis Rogers of the Tasmanian Development Board, 28-02-2000

Following the bushfires, the main purpose of the group was to share problems and offer emotional support. One of the objectives was to set a new direction for the region. Under the leadership of Bill Casimaty a concept of introducing new crops to the region was born.

Inspired by his overseas trip, Bill Casimaty built two large dams on his StrathAyr farm that allowed him to experiment with new crops. Other farmers in the area followed and soon on-farm irrigation systems were being built and new crops trailed.

During the 1979-1983 drought it became very apparent that in order to further diversify and intensify agricultural production in the Coal River Valley, a comprehensive irrigation scheme had to be build.

In a bid for the irrigation scheme, the CRPA represented interests of farmers in the region. Members of the Association became heavily involved in promoting the need for irrigation in the region and in conducting public awareness campaigns.

“New crops for new markets” was the most popular slogan of the group used in the push for construction of the Craigbourne Dam. Publicity events like the press conference in Geoff Crane’s empty dam at Strelley in 1980 were directed at attracting publicity and State Government’s attention and support.

The Association has continued to be particularly active during difficult times. The CRPA would seek assistance and support from the State Government and private investors to address water shortages and deal with technical problems,

In 1999, when the Craigbourne Dam was at critically low levels, members of the Association proposed building a pipeline from the Derwent River to supply much needed water to the region. The proposed $30 million scheme would have enabled water to be pumped from Bridgewater all the way to Tea Tree by a pipeline.

The role of CRPA in development of the region

The nature of the Association has changed over the years. Originally it’s main purpose was to assist farmers in “getting back on their feet” by sharing equipment and experience.

The group quickly realised that it could use its collective influence to negotiate better contracts for supply of agricultural produce and to improve the services available to local businesses and the community. The bargaining power of the group was demonstrated during successful price increase negotiations for malting barley with the Cascade Brewery.

One of the most important attributes of the Association has been its ability to identify problems and collectively search for solutions.

For example, In order to ensure availability of land suitable for agriculture, CRPA was involved with local government planning schemes, originally with the Richmond Municipality and after 1992, with the City of Clarence and the Municipality of Southern Midlands.

To further explore the potential for expansion and growth in the region, the Coal River Products Association organised a Future Planning Workshop in April 1995 at Orford. The purpose of the conference was to review major changes that had occurred in the industry over the past three decades and set a direction for the future.

A new mission statement for the region was produced as a result of the workshop:

"The Coal River Area produces, promotes and profitably markets high quality agricultural products (for which we have a sustainable competitive advantage) to enrich the long term standards of living of our families and the community."[35]

New goals for the district were set. For example, by 2000 the group aimed to have developed skills and expertise required to have 350 hectares of crops producing over $5,000 gross margin (based on 1995 values). They also aimed to achieve a 100 percent increase in hours of employment; expand infrastructure and marketing networks to grade, pack and export the produce; and gain approval for secure water supply to enable better planning and management of crops.[36]

An action plan was developed, with an emphasis on training and skills promotion, infrastructure, regional development initiatives and irrigation schemes. The ability to recognise changing markets and adapt to change was recognised as vital to the successful implementation of the strategy.

In 1999, the CRPA jointly with the Tea Tree Valley Irrigation District commissioned a study into potential sources of irrigation water to the area. Results of the study were presented to the members of the Association, State Government and other public bodies.

In 2000, a Coal River Valley Catchment Committee was established to develop a management plan for the area and facilitate further development of intensive agriculture to ensure that economic benefits of the SEIS were being maximised.

The Association was also involved in the Clarence Re-Use Water Scheme to ensure that water from the scheme would be used efficiently.

The CRPA continues to conduct regular surveys in the region to determine levels of investment in irrigation and farm equipment, farm size, employment levels, crops grown and potential developments.

CASE PROFILES OF INNOVATORS

The Coal River Valley once dominated by dry land cropping and livestock enterprises has been replaced by a "garden" of horticultural crops.

The availability of water and land with appropriate soil and climatic conditions for intensive horticulture set the conditions for the transition of agricultural practices in the Valley.

It was, however, a combination of local innovators and new investors who transformed the region.

They all recognised the potential of the region for new enterprises. They developed expertise and sought advice wherever it could be found. They took considerable risks and eventually reaped the rewards. They still believe in the potential of the Valley, but are fearful for its future if secure and reliable sources of water are not available.

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[35] Coal River Products Association – Proceedings of the Meeting at Eastcoaster Resort (21-22 April, 1995). Tilbury, Steele & Farley Australia, 1995

[36] Coal River Products Association – Proceedings of the Meeting at Eastcoaster Resort (21-22 April, 1995). Tilbury, Steele & Farley Australia, 1995

These are the stories of six leading innovators.

STRATHAYR TURF SYSTEMS, RICHMOND, TASMANIA

The enterprise

StrathAyr is a world leader in sport field and race track construction techniques. The company specialises in natural turf production and has a network of distributors around the world. StrathAyr Turf System has been installed at sporting venues in Egypt, USA, Singapore, Australia, Malaysia, Hong Kong and New Zealand.[37]

The company was established on the StrathAyr property at Richmond, Coal River Valley, in 1968 by Bill Casimaty following his return from a Nuffield Travelling Scholarship where he visited Britain, Europe and the USA. In 1972, the business expanded to Victoria and today, StrathAyr operates a turf farm in Victoria and a mixed farm, including turf, in Tasmania.

Along with producing turf for sports grounds, StrathAyr specialises in building racing tracks. The first racing track built by the company was used in 1990 in Hong Kong for the resurfacing of the Sha Tin Racetrack. The Byr Root (soil free) Turf that was used there is now licensed in eight countries around the world.

Why CRV

"Necessity is a mother of invention"[38]

Bill Casimaty has been described as one of the greatest entrepreneurs in the Coal River Valley, and possibly in Tasmania. Always seeking for better solutions, Bill has always encouraged his employees to identify and solve problems.

After the wool boom of 1950's, he realised that dryland farming and sheep grazing were no longer sustainable due to low rainfall and relatively small farm sizes in the Coal River Valley. His entrepreneurial nature drove him to try a range of new crops that had not been grown in the area before.

When he visited the United States to further explore agricultural opportunities and acquire new knowledge, he found that the turf industry was just starting to develop and for Bill it was enough inspiration to start a similar industry back in Tasmania.

On Bill's return to the Coal River Valley, he built two on-farm dams on his StrathAyr property to irrigate his existing crops and create an opportunity to introduce new crop enterprises.

Relying on his on-farm irrigation system, Bill soon started experimenting with new crops such as grape vines, poppies, peas, turf and vegetable seed crops. He had grown mushrooms prior to his scholarship and continued for some years but decided against investing in new sheds as his turf venture in Victoria was expanding rapidly.

During the drought of 1979-83, he was forced to pump water to his property from a weir at Richmond through six kilometres of aluminium pipes to ensure continuous water supply.

Every new contract presents itself with new challenges.

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[37] www.strathayr.com.au, Retrieved, 15-11-08

[38] Bill Casimaty, StrathAyr, Tasmania

StrathAyr's first specialist turf concept involved the total removal of soil from the turf with a washing process, which made it ideally suitable for the emerging trend towards the sand-based sportsfields and racetracks.

The company's development of its StrathAyr system for sportsfields and racetracks resulted in a major breakthrough with the MCG project. The company also developed concepts to facilitate the establishment of cricket wickets for venues like the MCG so that they could be used for cricket, shortly after the annual grand final event. Following three advances in the technology, the company developed its drop-in cricket wicket system, which has since been installed in New Zealand and Australia and is being trialled at Lords in London.

The company has also developed turf repair systems that facilitate high use, multi use sports venues as well as a ModulAyr Turf System, which has been used for several Davis Cup Tennis finals and for the Reliant Stadium in Houston, Texas.

Business strategy and investment

As Bill has always been concerned about the small population in his home State, StrathAyr expanded to Victoria when the national's pioneer turf company, Custom Lawns, closed its operation in 1972.

"Selling turf was similar to selling mushrooms"[39]

Both turf and mushrooms involved entry into virgin markets and Bill used publicity and public relations to create interest in both products. Turf was a new product in Australia, a novelty with no developed market. Bill used figures of the US pioneer in the turf industry to forecast his potential demand.

StrathAyr supplied Custom Lawns' Housing Commission's contract in Victoria by shipping turf to Melbourne. One of StrathAyr's first projects was the redevelopment of the Hobart Showgrounds in 1980 in preparation for the Inter-Dominion Trotting Series.

Capabilities

The Nuffield Farming Travelling Scholarship inspired Bill to form the Coal River Products Association and introduce irrigation to the Coal Valley district.

One of the major challenges Bill faced was to develop weed, insect and pest control techniques when there were no established methodologies. The Tasmanian Department of Agriculture and the University of Tasmania initially provided much needed assistance in dealing with weed problems and advising Bill on the use of chemicals. StrathAyr soon formed an in-house research and development program to deal with a range of agronomic issues.

The company trains its employees to observe the effect of various agronomic techniques. Informal research and development, where staff is encouraged to constantly seek new solutions is an integral part of the company's culture.

Research and development is a vital part of StrathAyr's culture. The company continuously develops improved turf concepts and systems. The company has always worked closely with several universities and believes in "*putting science into practice".* Bill was the founding Chairman of the Tasmanian University Farm Committee and a member of the governing body (Council) for many years.

[39] Bill Casimaty, StrathAyr, Tasmania

Future challenges

StrathAyr Racetrack and Sportsfield Systems have developed a reputation for providing athlete safety to both equine and human participants. Combined with the reputation for high use and all-weather benefits, the company plans to use these features to expand its international activity.

StrathAyr Turf Systems' future focus is on market expansion and further development of turf systems that resolve problems associated with the use of sportsfields as outdoor entertainment venues. Invariably they have to cater for an ever increasing range of activities while providing world-class, high-quality sports surfaces.

SOUTH PACIFIC SEEDS PTY. LTD., RICHMOND, TASMANIA

The enterprise

South Pacific Seeds is a medium-size company operating on a global scale. The company was established in 1986. SPS now has a reputation of one of the most innovative producers of vegetable seeds in the world.

The company was established by Phil Hancock and ten colleagues who left Yates when it was taken over by another company. Yates was one of the first companies to offer contracts for seed production to farmers in the Coal River Valley following the construction of the irrigation scheme.

SPS Production now operates in Australia (NSW, TAS, VIC and WA), New Zealand, Chile and Argentina. In Tasmania, SPS has contracts with growers in the Coal River Valley, Derwent Valley and in the North of the State.

South Pacific Seeds operates its Tasmanian Production branch in The Coal River Valley. The company in Tasmania specialises in production of hybrid cabbage, hybrid cauliflower, hybrid carrot seeds, onion seeds and spring-sown brassica. The primary focus of the enterprise is on hybrid cabbage and hybrid cauliflower seed production.

Why CRV

"Coal River Valley is recognised as one of the best seed production areas in the world for hybrid cauliflower seed".[40]

The potential for growing vegetables for seed production in the Coal River Valley was recognised soon after the decision to build an irrigation scheme was made. Natural advantages, such as dry summers, long hours of sunlight and relatively frosts free winters combined with a supply of irrigation water created an opportunity for the region to become one of the largest seed producing areas in Australia.

Business strategy and investment

"SPS has aimed to develop sheep farmers into agricultural farmers."[41]

[40] Craig Garland, SPS, Tasmania

[41] Craig Garland, SPS, Tasmania

SPS has had a significant impact on farming practices in the Coal River Valley. By providing practical and agronomic knowledge and guaranteed-price contracts, SPS has been encouraging traditional farmers in the region to switch to intensive seed production.

Today, SPS's seed production is pre-sold on contract to global customers. SPS, in turn, contracts with local growers. SPS provides growers with practical, hands-on advice including taking soil samples and providing advice on irrigation techniques and fertiliser use to its growers. Craig Garland, the Tasmanian manager, regularly visits their properties to offer ongoing support and closely monitors their progress.

"You have to be open and honest with your growers and your customers"[42]

SPS' objective is to connect local seed growers to global markets. It has played that role very effectively for over twenty years and continues to do so by developing new markets and building strong relationships based on trust and friendship with customers around the world.

Building trust with growers has been equally important. To maintain effective working relationships with it growers, SPS operates a transparent pricing system and are open about margins along the chain.

The initial investment capital was raised by the 11 founders. SPS reinvests its earnings in the company to finance expansion and ongoing research.

SPS' employees are offered an opportunity to purchase shares after two years with the company.

"Innovation is critical to our success."[43]

South Pacific Seeds has developed an effective problem-solving culture that enables it to constantly innovate its operations. Identifying a problem, finding a solution and translating the solution into practical steps is at the heart of the company's innovation culture.

SPS has been involved in seed research for over twelve years. The majority of the research is done and funded internally. SPS also receives financial support for its research programs through various R&D grants.

Only ten years ago, most of seed production was handled manually, with a limited use of basic machinery. To address increases in the cost of labour, SPS has introduced advanced machinery to reduce the use of manual labour. The company's innovative culture has enabled it to develop new technologies and adapt machinery acquired overseas to local needs. Today, SPS is a world leader in technological advancements in seed production.

To further reduce input costs and their impact on the natural environment, SPS has introduced recycled cardboard bulk bins to store and transport seeds. The bins are used throughout the entire production cycle, from harvesting and cleaning to shipping to global customers.

Capabilities

SPS has always cultivated links with R&D providers, such as the Tasmanian Department of Primary Industries, where Craig had been an employee.

[42] Craig Garland, SPS, Tasmania

[43] Craig Garland, SPS, Tasmania

SPS in Tasmania has well-established links with the University of Tasmania. The relationship developed through Dr Neville Mendham, a lecturer at the School of Agricultural Science at UTAS who moved to the Coal River Valley when the water became available.

The University Farm played a role in the early development of the seed industry in the district by providing research into seed varieties and managing commercial-scale demonstrations.

In 1996, SPS was experiencing serious problems with the quality of carrot seeds in Australia. A PhD candidate from the University of Tasmania, Dr Cameron Spurr, solved the problem which was the beginning of a productive 10 year relationship with SPS.

Future challenges

Future development of horticulture in the Coal River Valley is dependent on the continuity of water supply and availability of land for agricultural purposes. Water is the most critical issue, many growers have invested heavily into irrigation systems and water storage. A guaranteed supply of quality water is imperative to ensure the Valley can continue to expand all of the horticultural activities that are occurring. SPS is also concerned about the trend towards subdivision of rural land for residential purposes and the impact that this has on the ability of farmers to function and carry out their operations without unnecessary restrictions.

The impact of climate change is another challenge for all growers in the Coal River Valley. Intensity and frequency of severe weather patterns are already affecting crops in the area.

SPS has potential to continue to expand their operations in Tasmania based on global demand from their customers. However, that expansion will be limited by the willingness of farmers to commit themselves to contracts for intensive agricultural production.

HOUSTON'S FARM, CAMBRIDGE, TASMANIA

The enterprise

Houston's Farm is a major producer of pre-washed, fresh-cut salads in Australia. The company was established in 1991 by Anthony and Colin Houston. Over the decade from 1995-96 to 2004-05, Houston's Farm became one of six major fresh cuts producers in Australia, supplying seventy five percent of its fresh cut salads to major supermarket chains, Woolworths and Coles.

In 2006-07, the Houston's Farm introduced fourteen new products to its already impressive product range. While eight salad varieties were sold under the Houston's brand in Tasmania, the majority of their produce was sold under the Woolworths and Coles generic brands.

By early 2007, the company was supplying its products to almost 1,400 supermarket stores around Australia. Twenty five percent of their sales were in Tasmania, 40% was sold to Woolworths and 35% to Coles supermarkets nationally.

Why CRV

Anthony Houston grew up to be an egg farmer with a quiet ambition to move into horticulture.

"I was growing eggs. We were in eggs for 30 or so years, from when I was six years old. We didn't go past it. But for 20 years this guy Dennis said, 'Don't keep growing eggs. You have to get into lettuce.' But I said that we needed water to do that."[44]

Twenty years ago, when Anthony and his older brother were running an egg farm in the Coal River Valley, battery hens were receiving a lot of negative publicity. The Houstons were often in the spotlight.

Getting tired of seeing her husband depressed and concerned about the future, Anthony's wife, Pru urged him to *"ring that guy about growing lettuce"*. Anthony rang Dennis and said, *"You always said you'd help us grow lettuce if we had water. Well, we've got water."*

In 1989, with Dennis' help, Anthony started growing iceberg lettuce on his 35-hectare farm. He was later joined by his brother, Colin.

Business strategy and investment

When he first started, Anthony applied his knowledge from egg production to growing lettuce and a range of other vegetables, such as cauliflower, celery and broccoli. He soon realised that lettuce production required more expertise than he previously imagined, and so he began studying it.

Continuity and quality of water supply proved critical to the success of his enterprise. As the original irrigation system failed, Anthony pulled in expertise from the mainland to design an irrigation system that would suit the soil type.

"Eggs never change"[45]

Anthony soon discovered that the difference between egg production and growing lettuce extended beyond that of water requirements. Input costs into egg production were relatively constant and predictable. Early days of lettuce production nearly sent him broke. After investing in a cool storage room, the Houston's Farm was $1 million in debt.

In 1991, Anthony and Colin Houston established a private company, Houston's Farm Pty. Ltd., of which they both became equal shareholders. The combination of skills and entrepreneurial spirit proved to be a key to the success of the enterprise.

The brothers realised very quickly that the quality of their produce was going to be critical to gaining competitive advantage in the market for iceberg lettuce.

In 1993, the Houston's decided to diversify their production into fancy lettuces, such as red coral, green oak and red oak. Production of quality whole lettuces along with separately managed egg production, turned the farm into a stable and successful enterprise.

"…we got plastic bags and we punched holes in them with a screwdriver and we put the lettuces in them and had people out in the shed rolling their arms back and forth to get the water out."[46]

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[44] Anthony Houston, Chief Executive, Houston's Farm

[45] Anthony Houston, Chief Executive, Houston's Farm

[46] Anthony Houston, Chief Executive, Houston's Farm

Anthony and Colin started processing their lettuce in response to their customers' demand. Value adding was not originally part of their business plan. To keep their main customer, Wrest Point Casino, happy, the Houstons started experimenting with washing their lettuces using very primitive and inefficient techniques. However, their entrepreneurial nature encouraged them to innovate and make the process of washing and packaging their product more efficient.

"We got failure, failure, failure, success."[47]

In 1995, the company introduced lettuce leaf mixes, washed and ready to eat. The product quickly became popular within the food service industry around the State.

The following year, Houston's Farm started supplying bulk salads to supermarkets. In 1997, the company was approached by Woolworths to supply bagged salad to its Tasmanian stores.

In 1997, the market for fresh cut lettuce was almost non-existent. A promotional campaign, and the introduction of perforated air-tight bags that made the product last longer, allowed the Houston's to expand their markets.

In 1998, the company purchased a commercial washer to ensure better quality and efficiency of production. In order to make their product last longer, the Houston's brothers replaced the open trucks with refrigerated ones to transport their lettuce.

Houston's lettuce soon started being recognised as a top quality product, with an increasing number of loyal customers. Their sales were increasing by about 30% a year.

"A market-driven animal"[48]

Driven by the success of Houston's lettuce in Tasmania, Anthony was keen to take up an opportunity to enter the national market. Houston's Farm began selling its products in Victoria through Safeway. However, the sales volumes were very disappointing.

Despite slow response from the Victorian market, the company was experiencing significant growth. A new management style was introduced to manage the expanding business and settle any differences between the Houston brothers in regards to running the business and expansion plans.

Capabilities

When Anthony realised that he had to learn how to run accounts for horticulture to prevent his business from going broke, he approached John Maynard, an agricultural consultant, to help him identify the costs and determine where the losses and profits were.

Maynard created a planting schedule for the farm, determining how much of each crop to plant, when and where. With modifications, the schedule is still being used by the company.

[47] Anthony Houston, Chief Executive, Houston's Farm

[48] John Maynard, Davey & Maynard Agricultural & Resource Management Consulting

Future challenges

"It's all about land and water, as it always is.
The business is as big as land and water."[49]

Houston's Farm continues to be one of the most innovative and fast growing businesses in the Coal River Valley. The growth of the company has been largely driven by the entrepreneurial skills of Anthony and Colin Houston. The only boundaries for future expansion are set by the availability of land and, most importantly, continuity of a secure water supply.

QEW ORCHARDS, CAMPANIA, TASMANIA

The enterprise

Tian-An Pty Ltd/Qew Orchards is a family-owned and operated apricot orchard in the Coal River Valley. Qew Orchards specialises in producing tree-ripened apricots for the fresh fruit market.

Qew Orchards have grown to become one of the major suppliers of ripe apricots to wholesalers around Australia. Three years ago, they also began supplying the fruit to major supermarket chains around the country. Qew Orchards also sell apricots directly to consumers through door-sales and at country markets.

There are thirteen apricot varieties currently grown in the Chongs' orchard, such as the popular Moorpark, Orange Red, Bergeron, and Sundrop. Apricot varieties have been chosen based on quality and volume requirements.

Why CRV

Tasmania has always attracted the Chongs. It was one of their favourite travel destinations when they were living in Singapore. After about ten years of visits to the State and in search for a lifestyle change, they made a decision to move here.

Water supplied by Stage 1 of the South East Irrigation Scheme enabled the Chongs to take advantage of the warm and dry climate of the region. Long hours of sunlight create preferable ripening conditions and produce sweeter fruit. The late harvesting season has enabled Qew Orchards to target interstate and overseas markets for ripe apricots during their off-season.

Apricots require relatively dry climate as even moderate rainfall can damage the fruit and result in bruising. Apricots are location-specific and there are only a few places in Tasmania, such as the Coal River Valley, suitable for growing the fruit.

Business strategy and investment

Setting up a large apricot orchard required a significant capital investment and involved considerable risk. Trees did not produce fruit for the first two to three years, which made the early years of operations particularly difficult for Qew Orchards.

Approximately 20,000 apricot trees were planted on the Chongs' property in 1999. Ten years later, there are around 50,000 trees in the orchard. In 2006, the Chongs agreed to manage a large apricot orchard as part of a Managed Investment Scheme.

[49] Anthony Houston, Chief Executive, Houston's Farm

Almost 100,000 trees were planted in 2006 and 2009 marked their first harvest. Qew Orchards also leased the apricot orchard from the UTAS Farm.

In developing markets for ripe apricots, Qew Orchards used a customer network previously established by their orchard manager. They have also been consulting organisations like Austrade to identify potential markets overseas, and have plans to expand into Europe and the Middle East.

Qew Orchards recently introduced red pears to their orchard to replace an unsuccessful apricot variety. After extensive market research, the red pear was identified as a niche product that could provide high margins. Although it is not easy to grow, the red pear offered an opportunity to explore new market opportunities and utilise processing and storage facilities during the off-season for apricots. The first harvest is expected in 2009.

"You have to keep trying new things."[50]

Necessity has been the major driver of innovation at Qew Orchards. The enterprise developed a problem-solving culture that enables them to constantly seek better ways of managing the business by identifying problems and searching for solutions.

The diversity of soil types found within the boundaries of Qew Orchards requires advanced management techniques, in particular with regards to irrigation. Individual blocks of land have been created within the orchard to allow for application of irrigation techniques most suited to individual soil types and ensure the most efficient resource use.

The team at Qew Orchards constantly seek more efficient ways of using their resources to address issues such as water shortages and high labour costs. Introducing new methods of irrigation, sorting technology and replacing labour-intensive tasks with technology have been key to the success of Qew Orchards.

To reduce running costs during the off-season, Qew Orchards use their processing plant as a storage facility for local businesses, such as wineries.

Capabilities

Before investing in apricots, the Chongs considered various investment options, mainly in aquaculture, tourism and agriculture. After an extensive search and consultation with the Tasmanian Department of Primary Industry, Department of Economic Development and Tourism and local farmers, they decided to grow apricots.

Having no previous experience in horticulture, Heather Chong relied heavily on the knowledge and experience of horticulturalists from the Department of Primary Industry and the orchard manager who acquired his expertise in the field while running his own apricot orchard. Heather has since developed the necessary knowledge and skills over the years of running the business.

Producing fresh and ripe apricots required an advanced technology that would allow for gentle sorting of the fruit to avoid bruising. The required technology was acquired by Mr Chong from the United States and has been adopted by Qew Orchards.

[50] Heather Chong, Qew Orchards, Tasmania

Future challenges

"Agriculture is not sexy"[51]

Continuous and reliable water supply is critical to Qew Orchards. Recent drought and insufficient supply of irrigation water have forced the Chongs to take some trees out of production and implement strict management of irrigation water.

As apricots are seasonal crops and very labour-intensive, the availability and cost of labour has is one of major concerns for Qew Orchards. In comparison to other countries, the cost of seasonal labour in Australia is high. It is also becoming increasingly difficult to find workers who are willing to pick apricots for six to eight weeks during the Tasmanian festive season.

The cost and quality of transport services are also concerns for Qew Orchards. High cost of transport determines their export potential to a large extent. A relatively high standard of transport services is required as apricots are a very delicate product.

FROGMORE CREEK WINES, CAMBRIDGE, TASMANIA

The enterprise

Frogmore Creek is an award-winning producer of a wide range cool climate wines under their Frogmore Creek and 42 Degrees South labels. Current varieties include Pinot Noir, Chardonnay, Riesling, Sauvignon Blanc and Pinot Gris.

Frogmore Creek winery also makes wines on a contract basis for over thirty vineyards around Tasmania.

The estate was established in 1996 in Penna, Coal River Valley. Tony Scherer is a part owner and company director.

Why CRV

Tony Scherer's experience with organic farming began in 1974 in California. After many years of working on farms, Tony became increasingly concerned about the use of chemicals in everyday framing practices. His passion and faith in organic farming grew out of clouds of pesticides and herbicides used on US farms in 1960's.

Tony thought that there had to be a better way of growing fruit and vegetables. He began his search by looking at ways of attracting beneficial insects to his crops. A friend of his at the time, who today is a world specialist in the field, offered him his assistance.

In 1989, Tony arrived in Perth where he continued his research into organic farming. He quickly realised that there was no market or infrastructure for organic farming in Australia at the time. His experience with organic methods of farming, however, did not go unnoticed.

Tony's passion for wine began when he was approached by local vineyards interested in growing their grapes organically. Having been paid in wine, he acquired a taste for the beverage and started looking for a suitable site where he could start his own organic vineyard.

[51] Heather Chong, Qew Orchards, Tasmania

When he began his search, he *"never even heard of Tasmania"*. In 1983 he "*had run out of places to go"* on the mainland, and then he came across Tasmania. In May, he drove around the island for four or five days and thought that this was the only place that would not change during his lifetime and he decided to stay.

Tasmania offered a climate suitable for cool climate viticulture and Tony felt it would be an ideal location for his organic vineyard. For almost two years, Tony and his wife travelled around Tasmania searching for a suitable site. At one point, they even considered going to New Zealand, until they came across the Coal River Valley.

The Coal River Valley not only had suitable climate, soils and irrigation water, but it was also close to the capital city – Hobart. Another benefit of choosing the area was the availability of relatively inexpensive land.

Business strategy and investment

The company purchased a 430 hectares property at Penna in 1996 and planted 12 acres of Pinot Noir, Chardonnay and Riesling. They have continually expanded vineyard and winery operations since.

About a year ago, Frogmore Creek Wines started exporting their wines to the United States, mainly to California. It has always been the company's aim to export wines to the States, where they could use their well-established contacts. Since they started selling wines to the US market, the volume of sales increased from 20 cases a month to 300 cases. They are aiming at doubling this volume over the next 12 months.

The company has enjoyed a considerable growth since they purchased the winery in late 2003. From average processing capacity of 300 to 400 tonnes of grapes a year, they have increased the capacity to 1000 tonnes per annum. This expansion enables the Frogmore Creek Winery to process grapes grown at their own vineyard at Penna and continue to process grapes from 36 other Tasmanian vineyards under their own labels. The company continues to improve their wine making facilities for these customers.

What distinguishes Frogmore Creek Wine from other commercial wine producers is their engagement in the community and with the environment. Tony and the team at Frogmore Creek recognise the importance of preserving the environment. They cooperate with the Endangered Species Group to create a habitat for endangered species on the property at Penna.

Capabilities

Following his vision, the company did not use any chemicals on the vines when he first established the vineyard. In 2006, weed infestation caused by high rainfall, forced the company to introduce herbicides to their practices and wines harvested since then have not been labelled "organically grown".

Since the introduction of herbicides in 2006, there has been a 50% increase in yield from the vineyard. Currently, the company is hoping to go back to organic methods of growing grapes and looking into new, organic ways of dealing with weed and pest issues. Three hectares of the property are currently used for running trials of organic herbicides.

As climate change has become an issue, the team at Frogmore Creek is collaborating with the wines industry to develop measures of reducing their carbon footprints and secure sustainable management of the enterprise in the future.

Future challenges

"Best sites in Tasmania haven't been planted yet…"[52]

Out of 430 hectares of the property, approximately 180 hectares are suitable for planting. However, the area under cultivation has been restricted by the availability of water.

Other factors limiting further investment and expansion of Frogmore Creek Wines have been high capital costs and the local government planning scheme that largely determines land use in the region.

Even though, in his view, there is still a lot of potential in the Coal Valley, he would not like to see the entire area planted with vines. He believes that the variety of crops grown in the region only adds to its natural beauty.

"We are in the position to offer the world an iconic Tasmanian produce."[53]

Tony Scherer strongly believes that Tasmania and the Coal River Valley still have a lot of potential. However, for this potential to be realised, he believes there needs to be a significant change in mindset. As the Tasmanian economy is not big enough to compete on volume, he believes that, *"production should be product and demand, not commodity-driven".*

Tony strongly believes that Tasmania has a potential to create an iconic brand that is associated with top quality. The company's vision for Frogmore Creek Wines is to be an "ambassador" of Tasmanian produce and be a showcase of what the State has to offer.

DOMAINE A/STONEY VINEYARD, CAMPANIA, TASMANIA

The enterprise

Domain A/Stoney Vineyard was originally established in 1973 by Priscilla and George Park. In 1989, the estate was taken over by Peter and Ruth Althaus.

The 20-hectare property is located on the side of a hill in the Coal River Valley. Sheltered from westerly winds, it enjoys long hours of sunshine and very little rain. The warm climate of the region translates into a long ripening period and essentially creates suitable conditions for production of one of Tasmania's finest wines.

Domaine A/Stoney Vineyard is proud of its Cabernet Sauvignon, Cabernet Franc, Merlot, Petit Verdot, Pinot Noir and Sauvignon Blanc. The exquisite flavour and aroma of Domaine A/Stoney Vineyard wines have been recognised by wine experts around the world.

The Domaine A Cabernet Sauvignon was the first Tasmanian red wine to be included in the Langton's Classification of Top 100 wines, a classification that is considered a benchmark of Australian wine and wine investment.

[52] Tony Scherer, Frogmore Creek Wines, Tasmania

[53] Tony Scherer, Frogmore Creek Wines, Tasmania

Why CRV

When Peter Althaus first arrived in the Coal River Valley, he was quickly named an "enfant terrible". He was a man with a vision and dedication, a newcomer to an area dominated by sheep grazing and dryland cropping.

"We wouldn't have come here if it wasn't for the water."[54]

Since his arrival in the Coal River Valley, Peter has seen a true transformation of the area. From a dull landscape dominated by sheep grazing properties, the region now enjoys a wide variety of agricultural enterprises taking advantage of its mild warm climate and irrigation water.

Peter developed his extraordinary passion and knowledge of wines in Europe. However, he saw little opportunity on the old continent and wanted to explore other parts of the world suitable for cool climate viticulture.

His exploration of potential sites for his vineyard took him to various places around the Southern Hemisphere. Peter visited southern parts of Argentina and Chile that had potential to become significant wine producers, but with little industry at the time. New Zealand was another possible location, but Peter found that this southern land was more abundant in sheep than grapes or even people.

"We fell in love with the scenery."[55]

From New Zealand, Peter and his wife Ruth travelled to Tasmania. The wine industry on the island was in very early stages of development, but the natural beauty of the island quickly won Peter and Ruth's hearts.

During their visit to Tasmania, Peter discovered a wine he particularly liked. It was a product of Domaine A/Stoney Vineyard.

Peter first visited the Stoney Vineyard in March 1989. Six months later, when the vineyard was put on sale, Peter returned to Tasmania to purchase the estate.

Business strategy and investment

1990 marked the first commercial vintage of Domaine A/Stoney Vineyard under new ownership. Peter identified the soil types found within the boundaries of his property. Expertise and knowledge acquired in Europe enabled him to match grape varieties to individual soil types.

As the wine industry in Tasmania was only just starting to develop, and the Australian market for wine was relatively small, Peter's strategy from the very beginning was to export his wine.

Based on this approach and by using his already long-established contacts in Europe, Peter managed to build a worldwide network of consumers. Currently, fifty percent of Domaine A/Stoney Vineyard wines is exported, with a majority sold in China, Singapore, Japan and Europe.

[54] Peter Althaus, Domaine A/Stoney Vineyard, Tasmania

[55] Peter Althaus, Domaine A/Stoney Vineyard, Tasmania

His approach to making wines has always been focused on producing the finest quality product that anyone with some knowledge about wines would recognise for their quality and unique aromas and flavour.

Capabilities

"I have fulfilled my dream." [56]

The key to his hard earned success has been *"dedication and hard work"*. If you want to fulfil your dream, you "*cannot take any shortcuts".*

Peter Althaus relied entirely on his own expertise when making early business decisions. He brought with him to the Coal River Valley not only knowledge and experience, but also the technology to make cool climate wines.

Future challenges

About two years ago, Peter began working on a succession plan for his enterprise. So far he has found it difficult to find someone with the same level of expertise and passion for the art of winemaking.

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